Collaboration and open access to Law: How can Web 2.0 technologies help us understand the law?

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Abstract

With 4 billion people excluded from the Rule of Law, United-Nations Development Programs' Commission on Legal Empowerment of the Poor established that a first strategy to foster access to justice and the rule of law would call on the greater dissemination of legal information and the creation of peer groups to provide self-help. This essay discusses how the global Legal Information Institute movement could employ collaborative technologies, also called Web 2.0, in light of the UNDP-CLEP's vision. These non-profit organisations compile a free and open archive of primary legal materials, namely laws and court rulings, on the Internet.

Based on current examples and technological tools from the field, we establish an analytical framework called the Collaborative Document Management Framework. The CDMF is comprised of two entities, agents and documents, that interact in four relationships: links; conversations or exchanges; consumption; and writing. We then apply this framework to the specific case of legal documentation.

Acronyms	
Canadian Legal Information Institute	CanLII
Collaborative Document Management Framework	CDMF
Global Positioning System	GPS
Legal Information Institute	LII
United-Nations Development Programs' Commission on Legal Empowerment of the Poor	UNDP-CLEP

1. The Case for Collaboration in Understanding the Law

In 2008, a report from the United-Nations Development Programs' Commission on Legal Empowerment of the Poor (UNDP-CLEP) found that:

> at least four billion people are excluded from the rule of law. It is the minority of the world's people who can take advantage of legal norms and regulations. The majority of humanity is on the outside looking in, unable to count on the law's protection and unable to enter national, let alone global markets. [1]

According to the UNDP-CLEP [2], legal empowerment is articulated in four pillars: the first, and deemed to be essential, is Access to Justice and the Rule of Law; followed by Property Rights; Labour Rights; and Business Rights. Each pillar represents and enables a systemic change that will foster a richer democratic life and a healthier economy. In fact, the UNDP-CLEP members[3] stated during the launch of the report that they hoped "legal empowerment" would become as far reaching as the concept of "sustainable development" in the global arena.

UNDP-CLEP's first pillar, Access to Justice and the Rule of Law, can be achieved through a series of measure, of which:

> Empowering the poor through improved dissemination of legal information and formation of peer groups (self-help) are first-step strategies towards justice. Poor people may not receive the protection or opportunities to which they are legally entitled because they do not know the law or do not know how to go about securing the assistance of someone who can provide the necessary help. Modern information and communication technologies are particularly well suited to support interventions geared towards strengthening information-sharing groups, teaching the poor about their rights, and encouraging non-formal legal education.[4] [Emphasis added]

In fact, Moorhead and Pleasence have this to add about "self-help":

[1] Commission on Legal Empowerment *Making the Law Work* 3
[2] Commission on Legal Empowerment *Making the Law Work* 27
[3] The Economist 5 June 2008 77
[4] Commission on Legal Empowerment *Making the Law Work* 64

> As well as alternative sources of funding, interest is also rising in methods of expanding access to justice that centre on utilizing the energy and efforts of consumers of legal services. Legal education and self-help services are becoming increasingly attractive to policy makers wishing to maintain (or expand) legal aid coverage in the face of downward costs pressure.[5]

Enabling and empowering citizens with exercising their legal rights is not new. Bentham famously said: "every man […] his own lawyer"[6] although, as Hart explained:

> Bentham did not think that a legal profession was actually dispensable […], but he did think that the need for and the cost of lawyers services could be very much reduced if the artificial encrustations of the law and its procedure were cut away. Real substantial progress, he thought, ultimately depended on the radical recasting of the form of the law and the adoption of codes, framed in a language freed from the lawyer's triple mystifying blight of 'ambiguity, obscurity, and over-bulkiness' [7]

This propensity of the legal system also finds an echo in Ethan Katsh's writings:

> What is often not understood is that the law is much more comfortable dealing with its own universe and deals with the real world only indirectly. Legal decisions do not depend on one's status in the real world but on a fictional counterpart in the world that law has created.[8]

It is clear that the UNDP-CLEP's work reflects such criticism of the legal system. But before jumping to our main argument, it is important to consider how these pitfalls have been categorized and addressed in the past. The astute reader will notice that what the UNDP-CLEP proposes is quite novel when compared to historical approaches to reforming the legal system.

If the rule of law expresses the legal context under which civil society evolves, the concept of access to justice establishes how this operates for the citizen. Ab Currie explored in depth the concepts of access to justice and the rule of law:

[5] Moorhead 2003 *Journal of Law and Society* 6
[6] Schofield *The Complete Works of Jeremy Bentham* 123 (Supplement no. V, Letter III)
[7] Hart *Essays on Bentham* 30
[8] Katsh *The Electronic Media and the Transformation of Law* 250

> Access to justice is a matter of fundamental social policy. Having full access to the justice system defines an important aspect of legal citizenship. At the societal level, access to justice implies an important connection between justice policy and the broader public policy issue of social cohesion. Full access to justice for citizens implies that they will have a positive attachment to the justice system, expressed as respect for the rule of law and confidence in the justice system. This represents a form of attachment to the society through the central social institution of the justice system. In theory, this will lead to a greater level of social cohesion. [9]

Currie's thoughts provide an essential stepping-stone to understand the context around the UNDP-CLEP's work. Citing the work of Cappelletti and Garth[10], Currie presents the concept of access to justice as three "waves" in order to categorize how it can manifest itself:

> The first wave of access to justice, which emerged in the post-war period, was legal aid. The second wave was the representation of "diffuse interests". This includes class actions and public interest litigation, and the emergence of public interest centres. The third wave, according to Cappelletti and Garth, is a more fully developed access to justice approach. The third wave goes beyond case-centered advocacy. It represents a broader panoply of less adversarial and less complex approaches, including changes in forms of procedure, changes in the structure of courts or the creation of new types of courts, the use of paraprofessionals, and changes in the substantive law itself. [11]

In that sense, the first initiative highlighted by the UNDP-CLEP has two components, the improved dissemination of legal information and the establishment of "self-help" initiatives between peers. It is clear that the latter falls within what Currie calls the second wave of access to justice initiatives, that of mutualisation of needs and collective action, while the former is a rather new approach to the question. In both cases, they have less to do with the legal system itself, but providing the tools required to operate within the system in a more convenient manner.

[9] Currie *Expanding Horizons* 39
[10] Cappelletti *Access to Justice* 52
[11] Currie, *Expanding Horizons* 40-41

One can see a direct link between the first aspect, the improved dissemination of legal information, and the Declaration on Free Access to Law[12] along with the Legal Information Institute (LII) movement[13] in general. These not-for-profit organisations compile an open access archive of primary legal materials, namely laws and court cases, in a fully searchable and free database on the Internet. It seems that the UNDP-CLEP has opened a door to this movement, offering the concept of legal empowerment as a sustainable and reachable goal directly within the mandate of LII.

As for the second aspect, that of self-help, one could wonder what role the LII could play in fostering this goal. In fact, perhaps there are digital tools that could be built on top of the existing open archive of primary legal materials to facilitate the UNDP-CLEP's vision of self-help. Many new technologies, dubbed Web 2.0 or the collaborative Web, have taken root in the past few years. This article aims to explore these new technologies and initiatives in order to explore which strategies could enable the UNDP-CLEP's vision within the context of the LII's missions.

In other words, this article deals with how Web 2.0 or collaborative technologies can be employed within the specific context of an open access archive of primary legal materials. We will attempt to provide a technological roadmap to the attention of the global LII community. We will not specifically discuss how Web 2.0 and the law interact, say whether a lawyer should blog[14] or whether a specific community of jurists should employ Wikis. We will rather analyse the tools of the Web 2.0 movement in order to provide some clues that will feed into the technological development of the systems that operate within the LII's open archive of primary legal materials. Our work is based in particular on the Canadian Legal Information Institute[15] (CanLII) but aims to provide general

[12] WorldLII, *Declaration on Free Access to Law* http://www.worldlii.org/worldlii/declaration/
[13] Poulin 2004 *First Monday* 11
[14] Schwartz 2009 *New York Times* [Internet]
[15] Charbonneau *La jurisprudence en accès libre à l'ère du contenu généré par les usagers*

guidance. This essay may nonetheless provide some insight to the general issue of Web 2.0 or collaborative technologies and the law.

1.1. Collaboration or Web 2.0 Explained

Many aspects of Web-based collaboration have existed from the early days on the Internet. But the origin of the expression Web 2.0 is largely attributed to Tim O'Reilly, a publisher of computer books in the United States. O'Reilly[16] presents the concept of Web 2.0 as a class of Internet initiatives that offer a platform where users may control content and data of interest, across the boundaries of many Internet websites, disregarding limitations of specific software platforms or electronic devices.

The underlying pieces of Web 2.0 could be expressed as many elements loosely joined, with intertwining services where the user benefits from an enriched experience[17]. This architecture facilitates the participation and collaboration, through multiple websites, allowing the reuse and integration of a wide variety of content all the while facilitating the dissemination of newly created content. The Organisation for Economic Co-operation and Development refers to "User-Generated Content" and specifies that:

> [the] use of the Internet is characterised by increased participation and interaction of Internet users who use it to communicate and express themselves. The most prominent concept to describe this evolution which uses the Internet's inherent capabilities more extensively is called "participative web". It represents an Internet increasingly influenced by intelligent web services based on new technologies empowering the user to be an increasing contributor to developing, rating, collaborating and distributing Internet content and developing and customising Internet applications [...]. These new web tools are said to enable commercial and non-commercial service providers to better harness the "collective intelligence" of Internet users, using information and knowledge embedded in the Web in the form of data, metadata, user participation and creating links between these. One characteristic of the participative web is also

[16] O'Reilly 2005 *O'Reilly Net* [Internet]
[17] Coombs 2007 *Computer in Libraries* [Internet]

> the communication between users and between different separate software applications via open web standards and web interfaces.[18]

Many thinkers have attacked Web 2.0 as being the supreme manifestation of amateurish enthusiasm[19] with little or no real value. Our approach is a bit more prosaic. We consider that Web 2.0 designates a set of tools or methods that enable individuals to use digital content, discuss and collaborate through the Internet. Because the expression "Web 2.0" has a negative connotation in certain circumstances, we prefer the equivalent term "collaboration" and will use both interchangeably in this essay.

1.2. Examples and Tools of Web-Based Collaboration

In this section, we provide some examples and present some tools of the collaborative web, particularly blogs, wikis, content hosting and sharing networks as well as social networks. We will also briefly touch on Google as certain aspects of its search engine are relevant for our analysis. Our goal is not to be encyclopaedic, but rather to highlight a certain number of aspects that will be used in our later analysis.

1.2.1. Blogs

To fully understand blogs, it is essential to distinguish the content they offer from its structure. In the first case, bloggers may establish their own editorial style, with a great degree of variety. In the other, the technological structure is relatively similar from one blog to the other[20]. In a sense, blogs contain posts about anything, but the underlying technological structure of blogs and the posts they contain are essentially the same.

Blogs are hosted epistolary editorial platforms, where posts are presented in reverse chronological order and may be categorized by keywords or tags

[18] Working Party on the Information Economy *User-Genereated Content* 8
[19] Keen *The Cult of the Amateur*
[20] Charbonneau 2006 *Lex Electronica* [Internet]

specified by the blogger. These categories are often referred to as folksonomies, because they are devised by “regular folks”, as opposed to the more formally devised taxonomies. Blogs are actually simple content management systems accessible via the Internet, such as Blogger[21] or WordPress[22]. In addition, one can read a blog either directly from its web address or by subscribing to its RSS (Really Simple Syndication) feed. This last point is a fundamental aspect of the collaborative web.

Before RSS feeds, one had to deploy considerable effort in devising the look and feel of a website. Because the structure of a blog is separate from its content (or rather, the content presented by a blog is structured in a systematic manner), the actual look imposed on the content is rather an afterthought and almost a trivial question. The ease of creating and managing blog-based posts have made this a popular dissemination tool.

Finally, bloggers can engage in conversations by linking posts via a technological feature called trackbacks. Similarly, readers of blogs can usually post comments or reactions to posts, when this function is enabled by the blogger.

1.2.2. Wikis

Like blogs, wikis are also a simple content management system but they differ from blogs in that wikis are a network of pages usually organized by theme and created by a community of users[23]. Whereas the chronological display of posts is the central element in blogs, wikis are better understood as a collaborative authorship tool, geared to the drafting of complex documents or reference tools.

Wikis are deemed “open” if they are available on the open web, or “closed” if they are only available to a closed circle of users, such as through a protected corporate Intranet. As well, some wikis employ a very liberal editorial policy,

[21] http://www.blogger.com
[22] https://www.wordpress.com
[23] Dearstyne, 2007 *Information Management Journal* 27

allowing any user to modify content without limit, while others limit new contributions and revisions to existing contributions. Given this flexibility, wikis offer a wide variety of implementations.

Wikipedia[24] is a popular example of a very famous wiki. It is openly available on the Internet, but in recent years, its managers have had to impose a stricter editorial policy, asking that the community vet revisions to existing pages before they are implemented in the live version of the site.

Increasingly, work teams use wikis to share information and establish common policies and guidelines[25]. These constitute examples of closed wikis.

1.2.3. Content hosting and sharing networks

The decreasing cost of computer storage and increasing availability of high-bandwidth Internet access has opened the doors to a new category of websites: content hosting and sharing networks. On the one hand, content sharing sites allow users to upload content to the Internet, such as videos or pictures, so that others may access and eventually use them. On the other, sharing networks allow users to identify interesting content and store or promote it. Both of these allow for highlighting content on the Internet, either our own hosted content, or existing content so that we can share it with others.

With regards to content hosting, a popular example is the video sharing website YouTube[26]. Users may post videos of 10 minutes or less and allow others to view them. Other users may post comments on these videos, and "vote" for their favourite ones. The YouTube site shows, for each video, how many viewers have watched it, how many votes it has received and the comments associated to it.

More to the point, YouTube offers the possibility for anyone to easily display one of the videos hosted on this site on any other website. This is accomplished by

[24] http://www.wikipedia.org
[25] Ward 2006 *Business Information Review* 238
[26] http://www.youtube.com

copying a short snippet of computer code, available directly on the video's YouTube page, in an external web page. This functionality allows users to avail themselves and easily display content available on YouTube through any other website. This is a feature bloggers can use to highlight videos to their readership, without having to incur the cost of hosting video files themselves. Flickr[27] allows for the same functionalities, but for photographs.

A similar strategy is employed by content sharing networks. For example, Del.icio.us offers users a platform where they can post links to websites they like, and to categorize and manage these links. The same is done for the news sharing site Digg[28], with a slight variation, the more people "Digg" a news story, the more popular it becomes, driving it ever higher on the website. In this case, users participate in the editorial and classification processes of news stories.

Benkler analysed the Slashdot[29] website, which allows a community to generate news stories:

> Slashdot implements an automated system to select moderators from the pool of users. Moderators are chosen according to several criteria; they must be logged in (not anonymous), they must be regular users (who use the site averagely, not one-time page loaders or compulsive users), they must have been using the site for a while (this defeats people who try to signup just to moderate), they must be willing, and they must have positive "karma." Karma is a number assigned to a user that primarily reflects whether he or she has posted good or bad comments (according to ratings from other moderators). If a user meets these criteria, the program assigns the user moderator status and the user gets five "influence points" to review comments. The moderator rates a comment of his choice using a drop-down list with words such as "flamebait" and "informative." A positive word increases the rating of a comment one point and a negative word decreases the rating a point. [30]

[27] http://www.flickr.com/
[28] http://digg.com/
[29] http://slashdot.org/
[30] Benkler *Wealth of Networks* 78

This illustrates the flexibility and power of content hosting and sharing networks. The arduous task of selecting or editing content is left up to the community, the website administrators simply devises a process to estimate authority or recuperate the work of others. The role of evaluating content is thus articulated to a series of metrics, most usually numerical, that can be applied to content that cannot be easily analysed by computer systems. After all, a computer system can easily calculate the length of a video, the size of a picture or how many words in a text, but it cannot find what is funny, interesting or valuable. On the other hand, YouTube displays how many times a video is viewed through its interface, or through blogs, which could yield an interesting measure of its worth, as with Slashdot's collaborative editorial process.

1.2.4. Social Networks

Social Networks:

> enable users to connect to friends and colleagues, to send mails and instant messages, to blog, to meet new people and to post personal profiles with information about them. Profiles can include photos, video, images, audio, and blogs. In 2006, MySpace had over 100 million users (although not all are active) and is now the most popular website in the United Sates according to Hitwise. Other popular [Social Networks] include Friendster, Orkut and Bebo. Facebook is a popular [Social Networks] on US college campuses with over 9 million users. Korean Cyworld is reported to have 18 million users in the country, or 40 percent of the population and 90 % of Internet users in their twenties.[31]

Since this report was published in 2007, Facebook[32] recently reported having more than 300 million members in September 2009.

The most important feature of Social Networks is to establish formal relationships between individual members of the network. Most contemporary social networks now offer content hosting and sharing options, as well as simple blogging tools.

[31] Working Party on the Information Economy *User-Genereated Content* 19
[32] Stone 2009 *New York Times* [Internet]

1.2.5. Google

In order to determine which web pages are the most pertinent to a particular query, Google famously claims to use a staggering array of variables. For our purposes, Brin and Page exposed the most salient variables[33] in an early essay. In order to evaluate the authority of a site, the search engine calculates different features of the site, such as how many websites link to it, what kind of domain they are (government, university, commercial, etc.), and so on. This illustrates the same point raised for Slashdot or YouTube, the use of a calculated metric to estimate the relevance, authority or a measure that is valuable to humans but difficultly calculated by a computer alone.

The Google PageRank algorithm therefore assumes that popular websites are authoritative and should be displayed first. This kind of analysis can be both incredibly powerful, and easily manipulated if one can guess which parameters establish the desired metric. In the early days of Google, the search engine had to change its algorithm to foil external tampering[34]. In any case, the point is that Google successfully uses a series of variables that are easily compiled by computers in order to establish a metric that mirrors the authority of a website.

1.3. Developing an analytical framework

The previous examples provide much needed insight to establish the salient features of collaborative tools and technologies. This analysis, based on the constructivist method of observation and deconstruction, will give us a general understanding of Web 2.0 or collaboration. In addition, a few other thinkers have tried to grapple with similar concepts to establish their own analytical frameworks.

[33] Brin *The Anatomy of a Large-Scale Hypertextual Web Search Engine*
[34] Battelle *The Search* 88

Johathan Zittrain[35] proposed *generativity* as his central thesis on analysing current trends in the Internet world. Although his focus was the impact of regulations on technological developments, he eloquently describes the need for openness and flexibility in the Internet to allow different generations of technologies to thrive.

Similarly, Kiousis discusses how interactivity occurs in online systems, defining it

> as the degree to which a communication technology can create a mediated environment in which participants can communicate (one-to-one, one-to-many and many-to-many), both synchronously and asynchronously, and participate in reciprocal message exchanges (third-order dependency [messages that refer to prior message transmissions]). With regard to human users, it additionally refers to their ability to percieve the experience as a simulation of interpersonal communication and increase their awareness of telepresence[36].

McMillan[37] explores similar concepts to establishing the relationship between users, systems and communications. Richards poses the following analysis of both their approaches:

> Whereas McMillan can be criticised for not inter-relating activity and property even as she acknowledges their existance and Kiousis can be criticised for his reductionism, they both manage to write extensively on interactivity without incorporating the motivations of the user with regard to content. This results in analysis of screen-based interaction in terms of user' perception of interactivity isolated from content. The emphasis has been on the act not the outcomes; the pleasure or pain of the activity of the interactivity and not the motives/needs of the user; on interactivity as a thing in itself and not as a contextualizing facility that mediates between environments and content and users and enables generation. [38] [emphasis added]

[35] Zittrain 2006 *Harvard Law Review* 1980
[36] Kiousis 2002 *New Media & Society* 372
[37] McMillan 2002 *New Media & Society* 273-276
[38] Richards 2006 *New Media & Society* 532-533

We can identify two key elements in this system, the user (or agent) and the content (or document). This duality is further illustrated by Hendler and Goldbeck's comparison and eventual criticism of the semantic web and Web 2.0:

> The social nature of Web 2.0 sites primarily allows linking between people, not content, thus creating large, and valuable, social networks, but with impoverished semantic value among the tagged content. Conversely, the Semantic Web is able to take advantage of significant linking in semantic space, and while it can represent social networks, it does not have social constructs that lead to linking between users.[39]

In order to illustrate how agents and documents interact, we offer the following Collaborative Document Management Framework (CDMF):

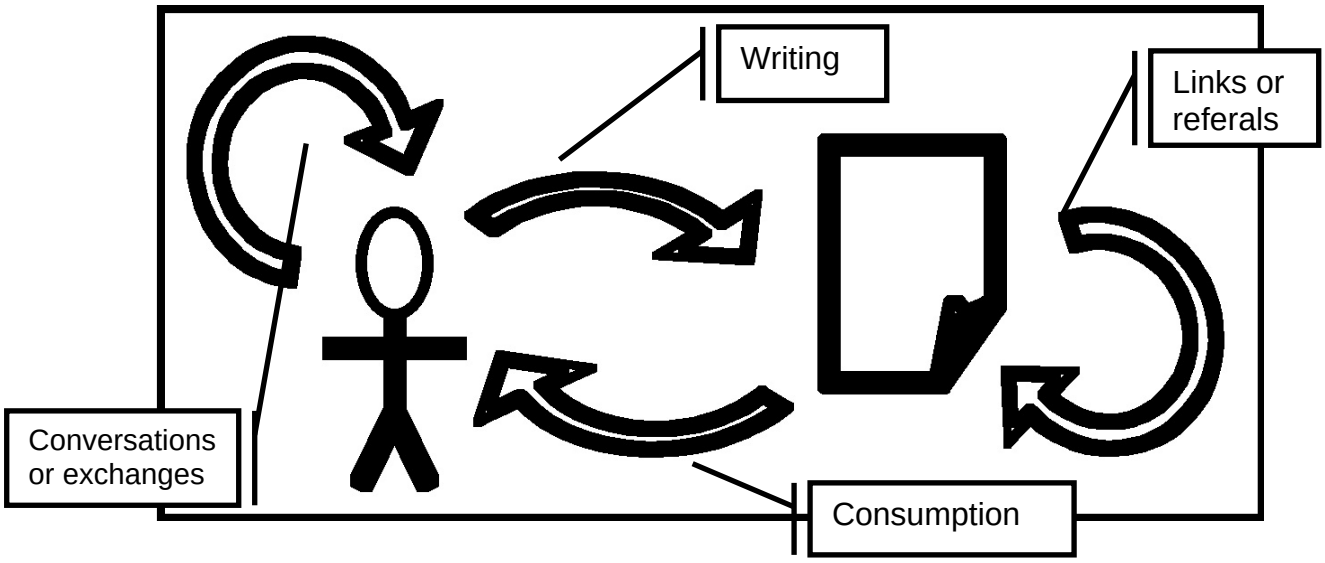

Figure 1 Collaborative Document Management Framework

The CDMF illustrates how different classes of agents collaborate together with regards to different types of document classes. In the first place, the recursive relationship between documents demonstrates the innate capacity of digital documents to link together. Similarly, the recursive relationship linking agents to themselves indicates the conversational nature of online communications. The relationships between agents and documents illustrate, on the one hand, how

[39] Hendler 2008 *Journal of Web Semantics* 15

documents are consumed or read by agents, and on the other, how agents write documents.

The CDMF is a new framework, established from analysing the parameters discussed by the authors presented herein as well as the various business and technological examples above. We will now apply it to primary legal materials, which represent specific document classes in the framework, in order to discuss how agents may collaborate to enable self-help in their legal needs and eventually foster the access to justice and the rule of law in society.

2. The Collaborative Document Management Framework and the Law

Digital information can be distinguished based on its structuring format according to a simple continuum. On the one hand, atomic information represents highly structured itemized data, like a transaction date, an email address or Global Positioning System (GPS) coordinates. This side of the information continuum is easily handled by computers and perfect for relational databases (i.e. easily grouped into entities with very granular information).

One could place structured or semi-structured text roughly in the middle of the information continuum. This is the case of primary legal documents, such as laws and court decisions. On the other hand, the bibliographic data associated to these documents can easily be subdivided into more atomic parts. It is therefore very important to distinguish between the textual instance of a class of primary legal documents, such as the Copyright Act of Canada itself or a specific court ruling, as they are structured or semi-structured documents, and the bibliographic reference to these documents, which can be subdivided into atomic bits of information.

On the other side of this spectrum lies purely textual information, such as unstructured, free flowing text, and eventually photos and videos. Obviously, the human mind is uniquely suited to understanding and making full use of this side of the spectrum, while computers prefer atomic and highly structured information.

Law lies somewhere in the middle, between atomic data and unstructured text. Understanding this continuum provides key insight in our discussion of how agents can interact with documents in an online environment.

2.1. Documents

Before discussing how documents can be linked together, we will explore primary legal documents, namely laws and court decisions, as they are typically archived by the LII movement, and other relevant document classes, such as law books, doctrine, etc. This section is intended as a crash course in legal documentation for the neophyte.

2.1.1. Primary legal documents: laws and court decisions

By their very nature, laws change over time, being abrogated, modified and enacted by acts of the legislator. As well, they may come into force either at once, or later, and as a whole, or by chunks. This dynamic nature makes this document class more difficult to manage and provides some distinct difficulties within the CDMF. This notwithstanding, laws generally have straightforward bibliographic structures: they have a name, a jurisdiction (enabling legislator), enactment date(s) and publishing details. Their text is usually structured in sections or chapters, and divided in numbered articles.

With regards to court decisions, this document class are more perennial although they may be repelled or upheld by a court of higher jurisdiction on appeal. It is important to note the growing importance of the neutral citation or reference, particularly in Canada[40], in order to distinguish the court decision from the proprietary database in which it is published and made available. This citation generally contains the names of the parties, a year and perhaps other temporal information, indication of the jurisdiction issuing the decision, and page references when published in law reports.

[40] Pelletier *The Preparation, Citation and Distribution of Canadian Decisions*

Although each court decision is unique, they have a general structure, as noted by MacMillian:

> The art of composing judgments is not taught; it is acquired by practice and by study of the models provided in the innumerable volumes of the law reports in which are recorded the achievements of past masters of the art[41].

In general, a court decision includes a heading, the judge's motive and purview as well as a few definitions, quotes and sometimes other thoughts unrelated to the case at hand (*obiter dictum*). It is important to note that court decisions may have multiple authors and not follow a coherent structure throughout, especially in appellate court rulings where some judges may dissent or provide alternative motives.

This brief and rudimentary introduction to the structure of primary legal documents aims to highlight some important features of these classes of documents, in order to fully discuss them later. A further point needs to be raised about how these are analysed by the legal profession to facilitate their use, particularly the textual analysis and tools that have appeared in the field.

Legal publishing companies offer a wide variety of products relating to legal documentation. Abstracts provide key elements of a law or court case; an index represents the topics contained in a single document or a body of documents through precise references; a thesaurus (also called "words and phrases") illustrates the relationship between concepts and sometimes provides a textual reference to its occurrence; citation analysis indicates which document refers to another; and selecting, arranging and classifying sources ensures an editorial approach to legal documentation. All of these products are the tools of the legal profession. These are made available through search engines; knowledge discovery mechanisms; knowledge representation and awareness solutions. Although we mention them in passing, these products and solutions constitute

[41] MacMillian 1948 *Canadian Bar Review* 491

the model we will emulate in developing tools to foster collaboration with regards to legal documentation.

2.1.2. Other document classes

In analysing legal documentation, one should not lose sight of other important classes of documents, beyond primary legal texts such as laws and court rulings. For example, books and scholarly articles may discuss important legal issues and provide theoretical context. Similarly, newspaper or magazine articles may illustrate court cases or particular needs that civil society may bring in front of the courts or the legislator. Finally, reference materials, such as legal dictionaries or encyclopaedias, provide entry points in understanding the law.

Although these document classes are not typically collected by LII, they should definitely appear on their radar screen in considering collaborative approaches to legal documentation. After all, there is little difference between a blog post and a news article or between a wiki and a reference book, save the authority that is conferred upon them by the editorial processes of commercial publishers. Similarly, the distinction between a peer-reviewed scholarly article and a researched position document from a trade or lobby group posted on their website can also be seen in the editorial process, albeit of a different nature.

In that sense, new publishing tools, like blogs, wikis and websites in general, will not supplant the commercial publishers or the peer-review process. All of these will probably coexist in the legal information ecosystem. The challenge then becomes to understand what value each document class can bring to the legal documentation environment and how the LII movement can recuperate this new value.

A class of documents that could eventually be added to a LII's database are articles from scholarly or peer-reviewed journals. There is a major push to host open access journals on the Internet, such as by using the Open Journal

System[42] developed by the Public Knowledge Project at Simon Fraser University. Similarly, many universities have launched institutional repositories to host content from their academic communities. Some repositories are open to all contributions from a specific field, such as the EPrints[43] archive for documents in library and information science. These are very similar to content hosting systems such as YouTube, although they target works of a more scholarly nature.

2.1.3. Links

As a general rule, the LII movement must give careful consideration of which document classes to store or host directly on their servers and focus only on the most authoritative. Hosting primary legal materials has strengthened the authority of a LII's database over time. Authority is a key asset that must be protected at all costs in legal publishing.

As opposed to hosting documents, providing links to external documents or hosting bibliographic data about instances of document classes does not carry the same level of risk. We are not suggesting that the LII movement should host legal blogs, as aspiring bloggers can find the necessary tools elsewhere. But, one could wonder what would be the risk of undermining the perceived authority of a LII's database if they were to provide links or references to articles from newspapers, magazines or peer reviewed journals, as well as to blogs and other such content directly from the LII's interface.

Said differently, asking whether a LII should link to external documents is trivial, as it is clear that there is value in doing so, at least in theory. The more astute question then becomes how to represent this data via the interface so as to make it clear that it links to external sources, as this would minimize the impact on the LII's authority, and how to establish metrics to measure the value of this external

[42] http://pkp.sfu.ca/?q=ojs
[43] http://eprints.rclis.org/

data through automated editorial processes. Also, establishing mechanisms to recuperate bibliographic data about external documents also becomes important.

To analyse these questions, we should establish a matrix analysing all documents classes against each other. So, this table would have a column and a line for each primary legal documents carried in a LII's database, namely laws and court decisions, as well as all other document classes: reference materials; books; articles from scholarly journals, magazines and newspapers; but also blogs posts; wiki entries; and web based documents. The goal should be to establish which sources constitute the best value for links in each jurisdiction, such as legal publishers or perhaps academics who keep research blogs. At first, a LII's internal staff will probably have to get the ball rolling by initiating a few links, but linking would eventually become a feature offered to the community.

With regards to the specific case of web-based content, there would be an immense value in building a quotation tool that would function along the lines of how YouTube allows bloggers to easily post videos within their posts. For example, a blogger reading a court ruling from a LII's website could want to quote a paragraph on her blog. Currently, a simple copy and paste will make this a reality, but imagine if the interface could generate a value-added linking system.

The user could select the desired text and the interface could generate a snippet of code that this user could insert in her blog to represent the quotation. As well, the system may generate the bibliographic reference to the snippet, in many bibliographic citation styles. Each time the post is displayed on the Internet, the LII's system would then receive a request to display the text, therefore keeping track of how often and from where (domain or Internet address) the blog is read, providing metrics to feed the algorithm to determine the value of this blog. In turn, this would assist the LII's systems in determining if the page concerning the ruling should provide a link back to the post.

On the blogger's part, using this quotation tool as opposed to simply copy-pasting the text could be ensured by providing additional value based on linking to a LII's systems directly. For example, if the court ruling is overturned on appeal, the "window" on the blog could display a warning, alerting readers that the post may not reflect the current status of the legal question established by the courts. As well, a notification system may be configured to inform the blogger of this situation. This example illustrates to potential of establishing a quotation system within the LII's existing system to link to pages on the Internet.

On a different level, liking from published works, like books and articles, to primary legal documents can yield some interesting insight for further developing value-added tools. For example, newspapers sometimes provide coverage of high-profile court cases, or report on lobbying activities with regard to legislative modifications. Similarly, a book may discuss similar topics. Users accessing a court decision may be interested in these articles, and may even want to pay to access this proprietary content. This prospect is particularly interesting within the context of digitally accessible content.

Commercial publishers of bibliographic content are a more stable business partner and offer a distinct advantage over other agents in general in that they adhere to the need for authority within their own business practices. For example, the LII movement could establish partnerships with third party resellers of bibliographic data and access to digital documents such as EBSCO or ProQuest. This could constitute a new market for them and they may elect to enter in profit sharing agreements for new subscriptions or the sale of access rights to their content.

The major asset the LII movement has with this regard is a full-text database of primary legal materials. The commercial publishers could be very interested in adding this data to their own bibliographic database, and in return, the LII movement could obtain bibliographic data and access rights for their communities from published documents. The business problem here is how to

deal with massive export of raw bibliographic data. This is a resource of immense value that must be leveraged to the benefit of the LII's mission.

On a similar note, agents using a LII's system could also be enabled to propose a link to a document, even if they are not the authors. Say for example, a government website explains a particular legal procedure for civil unions. A reader may want to link this web page to the articles in the relevant law, the civil code for example. In this case, another LII user may benefit from seeing the link to the web page when browsing the law. This could also be the case if a newspaper article discusses a new court ruling. A user may want to inscribe the bibliographic details and the web address (if available) in the LII's system, to formally link those two documents for the benefit of all.

In general, we describe new mechanisms to allow users to create links between documents themselves. Links may have to be vetted by volunteer editors or a special class of users and all data may not be viewable by everyone at all times. In fact, what contributions one can make should depend on the status an agent has in the system. This is the point we discuss in the next section.

2.2. Agents

Many varied stakeholders may want to collaborate to foster self-help groups and collaboration within the law. Most obviously are lawyers, who gain from using and contributing a growing body of knowledge about the law. But we must not lose track of the potential of other agents who may be interested in collaborating, such as members of other professions (engineers, nurses, etc.) as they also often interact with legal issues. As well, NGOs, trade and lobby groups may want to add their views to a shared knowledge base, although they have a particular perspective. Other groups with specific legal needs are obvious targets, such as land-owners, disadvantaged groups and minorities. Of note as well, are the individuals who study law, such as academics and students, as well as information specialists, such as librarians.

The examples of collaborative websites presented previously generally allow for three types of contributors. The first are anonymous, from users who are “lurking” on the system. Then, contributions can emanate from agents who have an account on the system, but for which the identity is not confirmed with a formal authority. Finally, there are the fully authenticated contributions, whereby an individual not only has an account but the validity of the person’s details and credentials are somehow confirmed by the system. This would be the case of a particular lawyer, having verified their membership with the local law society. This distinction may drive the perceived value of an agent’s contribution in the system.

Obviously, authentification is an onerous process both for system managers and users. That is why this hassle must be counterbalanced with appropriate incentives. Generally, this involves providing named or authenticated users with a personalized environment in the system, such as the desktop analogy. Opening an account could allow users to setup their own RSS feeds, configure links to preferred primary documentation and eventually contribute more content in the system, as we will discuss shortly.

The added benefit of allowing agents to create named accounts, and even fully authenticated accounts, would be to keep track in a more managed manner of each individual’s contribution. In a sense, building tools that will allow the establishment of metrics to measure a contribution’s worth is the key element in enabling a collaborative initiative within the law. This status is a dynamic value depending on the interactions with the documents and other agents. A preliminary step is obviously the creation of accounts on the system.

Account creation has an additional advantage. These could be used to provide agents with their numerical score of their status on the system, a bit like customer loyalty programs from airlines. In that sense, this could become a motivating factor to contribute content and efforts in the collaborative system.

Benkler[44] has determined that an agent's motivations to collaborate are based on their perceived rewards in this "potlatch" economy. In fact, these rewards are represented by the summation of three factors, namely: the monetary rewards one could eventually gain from collaborating; the hedonistic appeal of collaborating, as certain people perceive pleasure from helping others; and finally the social-psychological appeal of obtaining a certain status within a group. The rating system of the collaborative process could be further used within the context of Benkler's analysis of collaboration.

2.2.1. Conversations or exchanges

Contemporary social networks are a simple example of a system that allows and fosters conversations and exchanges. Facebook is a popular example in North America, but one could also draw from "private" social networks, such as Ning.com. This system allows the creation of a private network, available upon invitation. If the goal is to provide an incentive to users to create accounts and eventually authenticate themselves, opening a special social network seems like an interesting solution.

Another challenge posed by conversations or exchanges between individuals is that computers have a hard time in ascertaining their meaning. As anyone who has participated in discussion forums or Internet chat knows, these exchanges resemble free flowing text which is ill suited to computer analysis. While still allowing agents to discuss in this manner, it is also important to build tools that provide atomic information to the system to better understand conversations or exchanges.

A simple method of achieving this was presented with the Slashdot example. Community members should be enabled to evaluate contributions of other members, for example by allowing people to indicate if they "agree" or "disagree" following a binary voting system, or similarly to which degree they agree or

[44] Benkler 2002 *Yale Law Journal*

disagree. As well, if many people contribute the same item, say if many users of reasonable standing provide a link to a web document for a court ruling, these repeated contributions from different members could be construed as votes of agreement. Finally, if a commentator of very high standing within the community posts a comment or disagrees with a contributed item, then this opinion could carry more weight and the system may want to act on this more directly. In a sense, these mechanisms emulate the conversation between agents in a more straightforward manner, so as to be easily used by computer systems.

Another point to consider has to do privacy settings in the system. The general rule should be that open and public contributions are favoured at all times and constitute the default settings of the system as this is what drives the value of a collaborative system. Conversely, agents who desire to collaborate with a closed group of individuals could be invited to register for a closed account, which could constitute a fee-based service. Privacy levels of each contribution could be articulated on a private-public scale, from fully private, to shared with a close group, and then shared with an open group and eventually fully open.

2.3. Between Agents and Documents

In this section, we discuss what value can be derived from the relationships of agents and documents, namely when agents consume documents and when a document is written by an agent.

2.3.1. Consumption

Search string analysis is the classic case for analysing consumption patterns in a large document database. As transaction log analysis from a website's traffic is already possible with most server operating systems, we will focus our attention on novel methods of obtaining value from consumption patterns in document databases.

Awareness tools, or alerts, are a popular method of staying ahead of the news. Be them delivered via email or RSS feeds, many Internet sites allow to subscribe to news that adhere to certain keywords. Google Alerts[45] are an example of this system. One can provide a simple search query and receive new results as they occur or after specific time intervals. On the user side, they receive updates to a specific field of interest. On the side of the system managers, they receive a precise expression of what is of interest to users with regard to the content they survey.

This is a more elaborate process than simply offering RSS feeds of new court decisions. In that sense, building an awareness tool would provide key insight into the needs of users. In turn, this could also be used as the basis to develop a folksonomy of a loose taxonomy of a topic, based on the filters applied to alert systems.

2.3.2. Writing

As with previous cases, it is important to focus on recuperating atomic contributions in the form of easily identifiable data so that computer systems can meaningfully handle them with minimal or no input from human operators. In the case of direct contributions from agents, the system could allow them to identify different parts of a document.

For example, users could select text on the interface of a particular law or court ruling, and be allowed to tag these passages as definitions, headings, names or organisations, or motives, dissenting positions and the like, depending on which document class they are viewing and on their status. Again, if many people indicate the same tag, or few people of high standing, the system could elect to display this information as it is probably authoritative.

Another possibility would be to allow agents to contribute short snippets of text, such as terms reflecting subjects or keywords, a temporal reference like a date,

[45] http://www.google.com/alerts

the name of a person. A more open approach would allow agents to define type-value pairs, essentially defining their own namespaces and value set with regards to semantic web theory. Perhaps this last approach would be better left open to specific groups of agents, with a particular need of legal information. In any case, the system could always try to automatically correct spelling, provide boilerplate text as an agent types their contribution or promote the use of drop-down boxes rather than free text.

Finally, hosting short summaries and even longer discourse is a very risky endeavour if these are made available directly on the LII's interface. As we have discussed before, it is better to have the Agents host this content on an external site, such as a blog or a wiki, and allow the LII's system to consider the link to this contribution with the automated editorial system described in the previous sections.

3. Analysis and discussion

This article proposes a few ideas with regards to how collaborative practices on the Internet can serve open archives of primary legal materials. Of all the possible developments, we have argued for a few simple tools that have the potential to provide immense value to a LII's community.

First of all, a quotation tool would allow the dissemination of authoritative legal information in the blogosphere and on different websites. As well, it would assist in determining key use metrics that could help establish the relevant importance of a given blog or website.

Along similar lines, the incorporation of bibliographic data from established or commercial publishers directly within the LII's interface for specific court rulings or laws could further provide sources to the community. In recuperating elements from conversations or writing from agents, it is important to focus on those elements that represent an atomic data element, such as a vote or a tag based from a drop-down menu. Free flowing text should not be hosted on the LII's

servers and even less presented to the public, unless it is held privately or unless it is from an authoritative source. The relative authority of an agent in the system should be based on the quality of their contributions and it should be established on metrics automatically derived by the system, with little interference from a LII's staff.

With regards to which communities to first target for collaborative tools, an obvious choice would be the University community, rich with researchers, academics, students and librarians. This fertile ground would be an interesting testing platform as well as the source of the first contributions. A second source would be technology-savvy lawyers who would find value in using a web-based desktop for their work, particularly if they are in a smaller practice.

Collaborative strategies employ open platforms to recuperate the efforts of agents with regards to documents. Ironically, one could pose that collaborative system managers must understand the fine distinctions between a fully open process and one that employs very subtle exclusion mechanisms to foster a feeling of authority in each collaboration. Furthermore, collaboration has less to do with a *laisser-faire* attitude than a still subtle need for control in access rights, moderating and contributing content.

In that sense, despite the hype surrounding the open and free aspect of collaboration and Web 2.0, business imperatives drive the need for a degree of control and exclusion in attaining a high quality resource. Of course, these antipodal approaches must be weighed carefully so as not to open the floodgates to irrelevant and inconsistent data, but also narrow the scope of contributions to weed the wheat from the chaff.

The goal of course, is to reap the benefits of the network effect as described by Varian, Farrell and Shapiro[46]. This poses that the wealth of a network increases exponentially with the addition of each node. In a sense, the system's size and

[46] Varian Farrell and Shapiro *The Economics of Information Technology: an Introduction*

worth follows the snowball effect as new members join a network at an ever-increasing rate. If a collaboration system is configured in the right way, employing both exclusion and control mechanisms as well as allowing for open and free contributions, then one would hopefully reach the network effect in due time.

A final point could be made to link the issues discussed in this article with the recent enthusiasm with regards to cloud computing. This trend has users interacting with more and more web-based services for their computing needs, such as a word processor that operates as a website. Perhaps the LII movement could gain something by hanging in the clouds?

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